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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,296	07/22/2004	Junichi Adachi	042515	9190

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EXAMINER	
HON, SOW FUN	

ART UNIT	PAPER NUMBER
1772	

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/502,296	ADACHI ET AL.	
	Examiner	Art Unit	
	Sow-Fun Hon	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/7/06*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6 and 8-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6 and 8-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Withdrawn Rejections

1. The 35 U.S.C. 112, 2nd paragraph rejection of claim 16 is withdrawn due to Applicant's amendment dated 06/07/06.

2. The 35 U.S.C. 102(b) and 103(a) rejections of claims 1-24 are withdrawn due to Applicant's amendment dated 06/07/06.

New Rejections

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 8, 11, 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasebe (US 5,863,457).

Regarding claim 1, Hasebe teaches an optical compensation plate comprising an optical compensation layer (film, column 13, line 60), wherein a layer of an adhesive agent which is epoxy resin-based, is laminated directly on at least one surface of the optical compensation layer (applied to the optically anisotropic film, retardation plate, column 27, lines 58-66). The epoxy resin-based adhesive is curable, thermosetting and forms an anti-cracking layer as defined by Applicant's specification (original claim 4). Hasebe teaches that the optical compensation layer is a cholesteric layer whose

constituent molecules are aligned in the form of a cholesteric structure (cholesteric alignment, column 16, lines 56-60).

Regarding claim 8, Hasebe teaches that the thickness of the cholesteric layer ranges from 0.5 to 50 μm (column 17, lines 55-57), which encompasses the claimed range of 0.5 to 10 μm.

Regarding claim 11, Hasebe teaches that the constituent molecules of the cholesteric layer are liquid crystal polymers (in the eighth and ninth kinds of preparation processes, the temperature at which the photo-polymerization process is effected must be such that the polymerizable liquid crystal composition can be kept in liquid crystal state, column 27, lines 25-35) aligned in the form of a cholesteric structure (cholesteric alignment, column 16, lines 56-60).

Regarding claims 19-20, Hasebe teaches a liquid crystal display (column 28, line 33) comprising a liquid crystal panel (liquid crystal cell clamped by two sheets of polarizing plates, column 51, lines 20-25) as defined by Applicant's disclosure (page 3, lines 1-10) comprising a liquid crystal cell and the optical compensation plate described above (optically anisotropic film interposed between the polarizing plate and a liquid crystal cell, column 28, lines 33-39).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 12-13, 16, 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe as applied to claims 1, 8, 11, 19-20 above, in view of Shiozaki (US 5,193,020).

Hasebe teaches an optical compensation plate comprising an optical compensation layer, wherein an anti-cracking layer of a curable adhesive layer is laminated directly on at least one surface of the optical compensation layer, said optical compensation layer is a cholesteric layer whose constituent molecules are aligned in the form of a cholesteric structure, and said curable adhesive agent comprises at least one thermosetting resin-based adhesive selected from the group consisting of an epoxy resin, as described above. In addition, Hasebe teaches a polarizing plate (column 32, lines 45-48) comprising a polarizer (polarizing film, column 32, lines 46) and the optical compensation plate (optically anisotropic film, column 32, lines 45-48) described above.

Regarding claims 12-13, 16, Hasebe fails to teach that the optical compensation plate is configured by laminating anti-cracking layers on both surfaces of the optical compensation layer, so that the optical compensation plate and a transparent protective layer are directly adhered to each other by the anti-cracking layer in the optical compensation plate, and wherein the polarizer and the optical compensation plate are laminated together via the transparent protective layer, so that one of the anti-cracking layers and the polarizer are laminated together via the transparent protective layer.

However, Shiozaki teaches an optical compensation plate comprising an optical compensation layer 12, wherein an adhesive agent 13 is laminated directly on at least one surface of the optical compensation layer 12 (column 2, lines 64-68). Shiozaki teaches that the adhesive agent is of an optical grade epoxy resin (column 27, lines 18-22), which is curable, thermosetting and forms an anti-cracking layer as defined by Applicant's specification (original claim 4). Shiozaki teaches that a transparent protective layer may be used for the purpose of providing surface protection for the compensating layer, and that the compensator may be used in combined form with a polarizing film (column 27, lines 40-48), integrated together into an optical element (column 27, lines 6-11), for the purpose of forming a polarizing plate. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have configured the optical compensation plate by laminating anti-cracking adhesive layers on both surfaces of the optical compensation layer so that the optical compensation plate and the transparent protective layer are directly adhered to each other by the anti-cracking adhesive layer in the optical compensation plate, for the purpose of providing surface protection to the optical compensation plate; and to have laminated the polarizer and the optical compensation plate together via the transparent protective layer, so that one of the anti-cracking layers and the polarizer are laminated together via the transparent protective layer, for the purpose of providing a polarizing plate comprising the optical compensation plate.

Therefore, it would have been obvious to one of ordinary skill in the art a the time the invention was made, to have configured the optical compensation plate of Hasebe

by laminating anti-cracking adhesive layers on both surfaces of the optical compensation layer, and to have provided a transparent protective layer so that the optical compensation plate and the transparent protective layer are directly adhered to each other by the anti-cracking adhesive layer in the optical compensation plate, in order to provide surface protection to the optical compensation plate; and to have laminated the polarizer and the optical compensation plate together via the transparent protective layer, so that one of the anti-cracking layers and the polarizer are laminated together via the transparent protective layer, in order to provide a polarizing plate comprising the optical compensation plate, as taught by Shiozaki.

Regarding claims 22-23, Hasebe teaches a liquid crystal display (column 28, line 33) comprising a liquid crystal panel (liquid crystal cell clamped by two sheets of polarizing plates, column 51, lines 20-25) as defined by Applicant's disclosure (page 3, lines 1-10) comprising a liquid crystal cell and the polarizing plate (optically anisotropic film interposed between the polarizing plate and a liquid crystal cell, column 28, lines 33-39).

5. Claims 2, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe as applied to claims 1, 8, 11, 19-20 above, and further in view of Oka (US 5,976,297).

Hasebe teaches an optical compensation layer, wherein an anti-cracking layer of a curable adhesive agent is laminated directly on at least one surface of the optical compensation layer, said optical compensation layer is a cholesteric layer whose constituent molecules are aligned in the form of a cholesteric structure, and said curable

adhesive agent comprises at least one thermosetting resin-based adhesive selected from the group consisting of an epoxy resin, as described above. Hasebe fails to teach that the thickness of the anti-cracking layer ranges from 0.1 to 20 μm, or that the microhardness of the anti-cracking layer ranges from 0.1 to 0.5 GPa.

However, Oka teaches that a thermosetting resin-based adhesive (oligomer or prepolymer of a polyisocyanate compound, column 31, lines 4-8) as defined by Applicant's specification (original claim 4), is used for an optical component (antireflection sheet, column 31, line 1) for the purpose of forming a strong bond (column 30, lines 66-67) and of imparting sufficient hardness and durability to the optical component (column 31, line 1) which makes the thermosetting resin-based adhesive layer an anti-cracking layer. Oka teaches that the thickness of the anti-cracking adhesive layer is from 0.5 to 20 μm (column 27, lines 7-10), which overlaps the claimed range of 0.1 to 20 μm. Oka fails to teach the microhardness of the anti-cracking adhesive layer.

However, Oka teaches that the anti-cracking adhesive layer imparts sufficient hardness and durability to the optical component (column 31, line 1). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have optimized the process of forming the anti-cracking adhesive layer, to obtain a microhardness of from 0.1 to 0.5 GPa, in order to impart the desired hardness and durability to the optical component.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided the anti-cracking adhesive layer in the

optical compensation plate of Hasebe, with a thickness range of from 0.1 to 20 μm, and a microhardness range of from 0.1 to 0.5 GPa, in order to provide the desired hardness and durability to the optical component, as taught by Oka.

6. Claims 14-15, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe in view of Shiozaki as applied to claims 12-13, 16, 22-23 above, and further in view of Oka (US 5,976,297).

Hasebe in view of Shiozaki teaches a polarizing plate comprising a polarizer, a transparent protective layer and the optical compensation plate comprising an optical compensation layer, wherein an anti-cracking layer of a curable adhesive agent is laminated directly on at least one surface of the optical compensation layer, said optical compensation layer is a cholesteric layer whose constituent molecules are aligned in the form of a cholesteric structure, and said curable adhesive agent comprises at least one thermosetting resin-based adhesive selected from the group consisting of an epoxy resin, wherein the polarizer and the optical compensation plate are laminated together via a transparent protective layer, as discussed above.

Regarding claims 14-15, Hasebe in view of Shiozaki fails to teach that in the optical compensation plate, a pressure-sensitive adhesive layer is laminated on the surface of the optical compensation layer opposing to the surface on which the anti-cracking layer is laminated, or that a material of the pressure-sensitive adhesive layer is at least one resin-based pressure-sensitive selected from the group consisting of a rubber-based resin and a vinyl-based resin.

However, Oka teaches that a pressure-sensitive adhesive may be applied to a surface of an optical component (antireflection sheet, column 31, lines 23-26) to adhere it to another optical component such as a polarizer, for the purpose of forming a polarizing plate (column 31, lines 22-28). Oka teaches that a material of the pressure-sensitive adhesive layer is at least one resin-based pressure-sensitive adhesive selected from the group consisting of a rubber-based resin and a vinyl-based resin (column 17, lines 30-36).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided a pressure-sensitive adhesive selected from the group consisting of a rubber-based resin and a vinyl-based resin, on the surface of the optical compensation layer opposing to the surface on which the anti-cracking layer is laminated, to adhere the optical compensation plate to the polarizer of Hasebe in view of Shiozaki, in order to obtain the desired polarizing plate, as taught by Oka.

Regarding claims 17-18, Hasebe in view of Shiozaki fails to teach that a pressure-sensitive adhesive layer and a liner are further disposed in this order on the surface of the anti-cracking layer on which the polarizer is not laminated, or that a combination of a liner on the surface of a pressure-sensitive adhesive layer, is laminated on the surface of the optical compensation layer opposing to the surface on which the anti-cracking layer is laminated.

However, Oka teaches that a pressure-sensitive adhesive may be applied to a surface of an optical component (antireflection sheet, column 31, lines 23-26) to adhere

it to another optical component (column 31, lines 22-28). Furthermore, Oka teaches that a liner (release film, column 38, line 31) is disposed on the surface of the optical component for the purpose of protecting the surface of the optical component before it is adhered to another optical component (transfer, column 38, lines 35-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have disposed a pressure-sensitive adhesive layer and then a liner in this order, on the surface of the anti-cracking layer on which the polarizer is not laminated, or on the surface of the optical compensation layer opposing to the surface on which the anti-cracking layer is laminated, in the polarizing plate of Hasebe in view of Shiozaki, in order to provide protection for the surface of the optical component before it is adhered to another optical component, as taught by Oka.

7. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe as applied to claims 1, 8, 11, 19-20 above, and further in view of Broer (US 5,506,704).

Hasebe teaches an optical compensation layer, wherein an anti-cracking layer of a curable adhesive agent is laminated directly on at least one surface of the optical compensation layer, said optical compensation layer is a cholesteric layer whose constituent molecules are aligned in the form of a cholesteric structure, and said curable adhesive agent comprises at least one thermosetting resin-based adhesive selected from the group consisting of an epoxy resin, as described above. In addition, Hasebe teaches that the constituent molecules of the cholesteric layer are liquid crystal polymers (in the eighth and ninth kinds of preparation processes, the temperature at

which the photo-polymerization process is effected must be such that the polymerizable liquid crystal composition can be kept in liquid crystal state, column 27, lines 25-35) aligned in the form of a cholesteric structure (cholesteric alignment, column 16, lines 56-60). Hasebe fails to teach that the constituent molecules of the cholesteric layer are non-liquid crystal polymers wherein the non-liquid crystal polymer is a polymer obtained by polymerizing or cross-linking liquid crystal monomers which are aligned in the form of a cholesteric structure.

However, Broer teaches that the constituent molecules of a cholesteric layer can be non-liquid crystal polymers, wherein the non-liquid crystal polymer is a polymer obtained by polymerizing or cross-linking liquid crystal monomers (three dimensional network, column 5, lines 43-50) as defined by Applicant's disclosure (original claim 9), which are aligned in the form of a cholesteric structure (column 4, lines 32-40), in place of liquid crystal polymers (polymerized liquid crystalline material having a cholesteric order, column 6, lines 41-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided non-liquid crystal polymers in place of liquid crystal polymers as the constituent molecules of the cholesteric layer of Hasebe, wherein the non-liquid crystal polymer is a polymer obtained by polymerizing or cross-linking liquid crystal monomers which are aligned in the form of a cholesteric structure, in order to utilize the physical properties of the non-liquid crystal polymers, as taught by Broer.

Regarding claim 10, Hasebe teaches that a helical pitch of a cholesteric alignment ranges from 0.1 to 15 μm (column 13, lines 60-65, column 16, lines 56-60), which overlaps the claimed range of 0.01 to 0.25 μm.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe as applied to claims 1, 8, 11, 19-20 above, and further in view of Sarma (US 5,717,474).

Hasebe teaches a liquid crystal display comprising the optical compensation plate as described above, but fails to teach alternate image display apparatus such as an electroluminescence display, a plasma display, or a field emission display.

However, Sarma teaches that electroluminescence, plasma and field emission displays are being developed as image display apparatus alternate to liquid crystal display apparatus, for the purpose of providing superior viewing angle in the vertical direction (column 1, lines 15-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used the optical compensation plate of Hasebe in electroluminescence, plasma and field emission displays in place of the liquid crystal display of Hasebe, in order to provide an alternate image display apparatus with superior viewing angle in the vertical direction, as taught by Sarma.

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe in view of Shiozaki as applied to claims 12-13, 16, 22-23, and further in view of Sarma (US 5,717,474).

Hasebe in view of Shiozaki teaches a liquid crystal display comprising the polarizing plate as described above, but fails to teach alternate image display apparatus such as an electroluminescence display, a plasma display, or a field emission display.

However, Sarma teaches that electroluminescence, plasma and field emission displays are being developed as image display apparatus alternate to liquid crystal display apparatus, for the purpose of providing superior viewing angle in the vertical direction (column 1, lines 15-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used the polarizing plate of Hasebe in view of Shiozaki, in electroluminescence, plasma and field emission displays in place of the liquid crystal display of Hasebe in view of Shiozaki, in order to provide an alternate image display apparatus with superior viewing angle in the vertical direction, as taught by Sarma.

Response to Arguments

10. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. While Broer is still used as a secondary reference in the present prior art rejections, Broer is now used to teach that the constituent molecules of a cholesteric layer can be non-liquid crystal polymers in lieu of liquid crystal polymers, as discussed above, for the purpose of utilizing the physical properties of the non-liquid crystal molecules.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon.

Sow-Fun Hon

07/28/06

NASSER AHMAD
PRIMARY EXAMINER

8/1/06